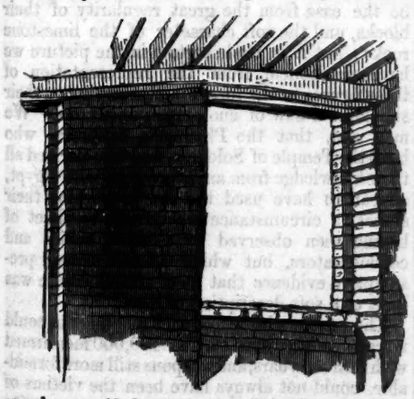
The Builder.

SATURDAY, NOVEMBER 26, 1853.

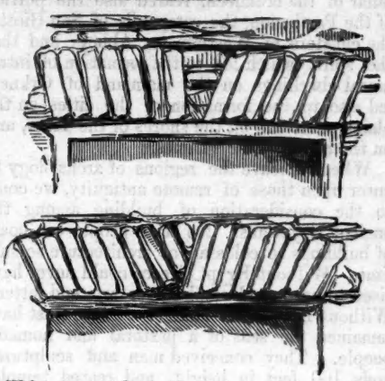
A FEW days ago the greater part of a house in the Fulham-road, near Walham-green, then in the course of erection, fell to the ground. One of the men at work upon it was injured, but fortunately no lives were lost. It is a corner house, intended for a shop; and both the front wall and flank wall rested on brestsummers, which were carried at the angle by an iron column,—a very ordinary and most objectionable arrangement. Without making any positive assertion as to the cause, the brickwork on which the iron column stood probably yielded under the weight, and of course all above came down. The wonder is, considering the manner in which houses round the metropolis are built, that disasters are not more frequent than they are. Such accidents, nevertheless, happen too often as it is; but unless life be lost nothing is heard of them beyond their neighbourhood. Again and again we have raised our voice against the reckless, dishonest course pursued by many speculative builders, and we feel it to be our duty, at this season of the year, when the chances of failure are greatly increased, to repeat the warning. In the case to which we have referred above, the work was not the worst of its class: it was better than much that is going on under our own eyes in various quarters, and fell for want of proper precaution—through want of knowledge or of thought. In scores, nay hundreds of houses now being carried up, the bricks, mortar, and workmanship are all infamously bad. If there be much wet weather, some of them must come down. In one place the mortar saves the bricks; in another, the bricks render the badness of the mortar of less consequence; and in a third, the minimum safety point is attained only by the exercise of rather more care than usual. Mould is made to supply the place of sand in the mortar; bad "place" bricks are used throughout, excepting where exposed externally; and even the introduction there of better bricks is made to produce evil, for the facing is not properly bonded into the other work, and thus we have the walls in two thicknesses. Every expedient is used to save material: out of the "solid" part of a chimney breast, into which we had occasion to cut the other day, six barrow-loads of dry rubbish *ran out* like sand.

The corruption-coverer, compo, and the system generally, have ruined the bricklayers, and many of them cannot produce good brick-



work even if they would. Here is a sketch inside the ground-floor of one of a range of houses now building near the Lower-road, Islington. It will serve, without the slightest exaggeration, for any one of the row. There is not a straight line in it: either the party-walls have sunk on both sides, or the plates and lintels were not put in level: the openings are not square, the reveals are crooked, the whole is a disgrace.

The same pile will afford an example of the mode in which the window and door openings, where the walls are to be compoed, are "arched" over in numberless instances.



This, it must be evident, is no arch at all, but depends upon the mortar. The bricks are placed, sloping slightly, side by side, and then the triangular space left in the centre is filled with a couple of bats and some mortar, under the vague notion that they form a keystone. When set in cement, these are a little better, but only a little. The error has been pointed out again and again, but fruitlessly: the use of such "arches" is more general than ever. "Gauged arches" are not much better. Wedge-shaped bricks can be obtained at little additional cost, and make sound work.

In another instance, where the arch is segmental and carries brickwork above, it has thrust the pier, A, over for want of sufficient abutment.

And where is the District Surveyor all this time, even if there is not a surveyor acting for the ground landlord? the public will ask. The district surveyors have very little power in this respect; or, at all events, have been brought to think so. It is true that Schedule D, in Part I. says that walls must be built upon a constructed footing, based upon solid ground or upon other sufficient foundation, and in Parts II. and III. that walls must be built of sound bricks or of stone laid in and with mortar or cement, in such manner *as to produce solid work*, and under these rules the surveyors could go to the referees in many cases when they do not, and obtain an award to bring about an amendment. The uncertainty which attends proceedings of this sort before the referees, the legal quibbles which arise, the weaknesses of the Act, the difficulty which has been found in carrying out some of the awards, are amongst the reasons which prevent the application. Over the timbering of houses they have no control whatever.

The district surveyors, we must be permitted to say, scarcely act together in the way they should. Uniformity in practice is much needed. In two or three of the districts a laxity has been permitted, which was as unjust to their brother surveyors who were seeking to do their duty, as it was to builders in other districts and to the public generally. What has been permitted in one district is quoted in the next, and made an excuse for other departures. Every metropolitan builder knows perfectly well that he is bound to give notice to the surveyor two days before commencing any work to which the Act refers, and is liable to a penalty for not doing so; that party-walls must be 18 inches above the roof, and chimney-stacks 3 feet; that fire-places must have chimney bars; that the *top* of the footings must be 9 inches below the lowest floor; that, with a few exceptions, wood may not be placed in party-walls, and that the exceptions must not be laid within 4 inches of the centre of the wall; that the Act does not permit wooden projections from external walls, excepting shop-fronts, and so on. And yet these and other most obvious and unquestionable requirements are constantly and perseveringly disregarded by some builders. The more respectable builders on speculation have as strong an objection as any to these proceedings, and to the scamping work to which we have alluded, and urge that they themselves are forced in self-defence to build less well than they would desire, or they would be driven out of the market.

The pressure on our columns forbids us to pursue the subject further at this moment, beyond the repetition of our earnest caution to those who would avoid accidents and keep a fair name.

AN INQUIRY INTO THE HISTORY AND CONDITION OF THE BUILDING TRADES.

MASONS.

THE diligent inquirer into the historical relations of building will assign a high place in his inquiry to the business of the mason. It would be difficult indeed to mention any other business so closely connected with the progress of our race, to which science and art are so much indebted, to which religion itself owes so many of its nobler influences. The mason has joined together in one unbroken chain the two extremes of civilization. His genius is alike conspicuous on the rudely-sculptured pillar of the cromlech, on the exquisitely-proportioned columns of the Parthenon. He built the altars from which arose the smoke of human sacrifice, and he reared the temples in which no sacrifice is offered but that of a contrite heart. Centuries before the dawn of civilization in the empires of the West, he constructed those monuments of rude but magnificent grandeur which moulder now on the banks of the Ganges and the Nile. It was he who reared the stately temples to Minerva and Jupiter, which are so inseparably associated with all that is noble in Grecian philosophy, all that is beautiful in Grecian art. And in the dark ages which followed the downfall of western civilization, when the temples of Rome were ruined, the palaces of the Cæsars plundered, the Pantheon despoiled, the amphitheatres laid waste, it was he who reared up the noble piles of Christian architecture which ushered in a new era in the history of the world, and another and a more beneficent period of human existence.

We hope it will not be uninteresting to our readers if, in our brief account of the history of mason-work, we endeavour to trace this great cycle of human progress. We will leave behind us for a moment the interminable forest of bricks, the elaborate compo ornaments, the narrow streets, the crowded thoroughfares of modern London, and glance at the mason-work of some of the great nations of antiquity, which have long since passed away.

But to trace correctly the history of mason-work, we must go beyond even the earliest nations whose records have come down to us. We must glance for a moment at its origin and gradual development in the dark and obscure periods of our pre-historic annals; the periods when the aborigines of this world burrowed in the earth like beasts of the field; and when the gigantic elk and the great urus wandered in undisturbed security amid the luxuriant herbage of its primeval forests. The researches of the archæologist have brought to light numerous evidences of the barbarous condition of mankind in these early stages of existence. Their

primitive dwellings consisted of mere excavations in the ground—sometimes on the slope of a hill, sometimes on the banks of a river. Such excavations were usually of a circular or oblong form, never more than 8 feet in diameter and 5 feet in depth; and the roofs, it is conjectured, were composed of boughs of trees and sods of turf, through which a single opening was made to serve all the purposes of door and window, and probably of chimney also. Another class of primitive dwellings, traces of which have been rescued from oblivion gives us the first indication of attempts at systematic building. These dwellings, likewise, consisted of mere excavations, but they were lined and partitioned with stones, and were occasionally accompanied with enclosures, such as a pastoral people would use as folds to their flocks and herds. The stones in this case had no pretensions to symmetry of form; for the rude implements of the Celt consisted of stone hammers and hatchets of flint, together with the weapons made from bone, which he applied to the purposes of agriculture and the chace. Such weapons are common to the aboriginal tribes of every nation. The stone javelin of the New Zealander, the flint spear-head of the Red Indian, the fishbone lance of the modern Esquimaux, are scarcely to be distinguished from the relics of the Celtic barrow; and in every case they are the instruments of a rude and barbarous people, still ignorant of the uses and application of metals.

The discovery of metals, indeed, was the most gigantic step in the march of civilization the world has ever made. The social changes effected by the greatest of modern discoveries—by the mariner's compass, by the steam-engine—are as nothing compared with the changes effected by the discovery of the metals. For the first time was then heard a sound which has rung without ceasing ever since, and which will continue to ring so long as civilization lasts—the sound of the mason's chisel. The hitherto intractable boulders of granite were fashioned into square blocks; and temples were erected to that Deity who had vouchsafed so great a blessing to his creatures. The vast Druidical temple of Stonehenge we will venture to select as a remarkable example of this new era in masonry. A group of pillars in ruins, surmounted with gigantic lintels, is, indeed, all that remains to us of that singular building; but these are sufficient to indicate that it has been constructed of hewn stones, and that the lintels have been attached by means of mortices and tendons laboriously chisseled from the solid. Various conjectures have been offered respecting the origin of this colossal structure; and although such conjectures are too speculative to prove in the slightest degree useful in this inquiry, we may state that its hewn stones prove that it is not a work of the stone period; that it is probably not even a work of the bronze period; but that its foundation must with greater truth be referred to the era when the smelting of iron ore had given to the northern races a command of that metal so eminently useful to mankind, which the archæologist has used to characterize a period, and which, it is probable, the future historian will use to characterize an age.

Such are the few indications we have to offer of mason-work as it existed before the dawn of history. Its mechanical progress presents but few points of attraction to the popular mind; but it has, nevertheless, a deep and lasting claim to our attention. Its memorials tell us that mankind were then as they are still, gregarious and social in their habits,—that their subterranean dwellings were still the dwellings of a people who formed themselves into communities. Their primitive implements tell us, too, that it was then customary, as it is still, to cultivate the soil, to chase wild beasts, to wage war, to adorn the person with different ornaments; and the tumulus and the cromlech show symptoms of that sentiment which leads men to rear temples to the Deity, and to leave memorials of the resting-place of the loved and honoured dead. Nor will he who regards aright the "mute inglorious" records of these mystical periods contemptuously spurn their influence on future progress. They tell us of a state of society, a condition of humanity which the world saw once, but which it will never see again. The gigantic animals, the contemporary occupants of the primeval forests, have in the cosmical changes of our planet, become extinct, and their fossil bones are now to be found in the museum of the palæontologist. But the immortal spirit of man, which was then created, still survives, and still continues to pursue its destined track. We must never forget that the same spirit which reared the monolithic pillar of the cromlech, reared also the portico of the Parthenon, the campanile of San Giotta, the cloisters of Westminster Abbey; and that the spirit which led to the formation of intramural dwellings on the mainland of Orkney, led also to the formation of the cities on the plains of Attica, on the shores of the Tiber, and on the banks of the Thames.*

When we leave the regions of archæology to enter upon those of remote antiquity, we come to the consideration of building among the ancient Egyptians. No other people can boast of buildings so colossal, of architecture so sublime. Without Egypt Greece could never have risen to her proud empire over arts and letters. Without Egypt the land of Judah must have remained the seat of a pastoral and nomadic people. They conceived men and sculptured gods 100 feet in height, and reared temples larger than some of our modern cities. They appear to have progressed by successive steps from the plain monolithic pillar as evinced in their obelisks, to the massive cylindrical column with its peculiar bell-mouthed capital, enriched with the lotus and palm leaf. The most ancient as well as the most noble remains of this latter style exist in the Temple of Karnak, at Thebes,—the largest and most splendid ruin of which either ancient or modern history can boast. Language can convey no proper conception of the melancholy grandeur of this temple, which no traveller can behold without emotions of solemnity and awe. How the Egyptian temples gradually acquired the sloping lines of the pyramid is beyond our province to inquire. It is certain the pyramids themselves must have exercised a powerful influence on the minds of this imaginative people; and, indeed, it has been held repeatedly that such an influence was the sole cause of the singular change of style between the structures of the Pharaohs and those of the Ptolemies. We are inclined to take that view, however, which regards the pyramids as rather the effect than the cause of the idiosyncracy; for the pyramids, says Herodotus, were regarded as emblematical of human life, the broad base being significant of its beginning, and the narrow apex being significant of its end.

The pyramids are generally built of enormous blocks of limestone, from the regions which lie to the southward of Thebes, in the valley of the Nile; and it is said that some of them were originally encased with slabs of chrystallized granite, derived from the porphyritic rocks over which that river pours its cataracts. Indeed, the most ancient buildings in Egypt were constructed of limestone blocks, worked upon a regular system, and laid in parallel courses; and from the tombs near the pyramids, from the pyramids themselves, and from the vestiges of some ancient substructures at Thebes, we have evidence that limestone was almost universally employed for building purposes. But so soon as the superior durability and hardness of sandstone had been ascertained, extensive quarries were opened, and this material brought into general use. It would seem, from the remains of limestone-blocks found in the inside of walls built of sandstone, that the last material was regarded as the most valuable for the purposes of exterior walls.

The methods of building in use among the Egyptians must always constitute an interesting study to the artisan and engineer of our day. In the first place, their means of transport were singularly remarkable. The picture, with which all of our readers must be familiar, of transporting a colossal statue from the quarries to its intended site, throws full light on this difficult operation:—"One hundred and seventy-two men, in four rows of forty each, pull the ropes attached to the front of a sledge, on which the colossus is let down. A liquid, probably grease, is poured from a vase by a person standing on the pedestal of the statue, in order to facilitate its progress as it slides over the ground. On the knee of the statue stands a figure, who claps his hands to the measured cadence of a song, in order to mark the time and insure the simultaneous draught,—a practice still common among the sailors of modern Europe when pulling a rope." Such was their means of transport by land. But their means of transport by water was, if possible, still more singular. Pliny describes a method of transporting blocks from the quarries down the river, by lashing two flat-bottomed boats together, which were then admitted to the quarry by means of a trench dug from the banks of the Nile. The boats were laden with a quantity of ballast, equal to the weight of the obelisk, and then sunk. The colossal mass was now fairly balanced over the boats, after which the ballast was removed, and finally they floated their new burden, and bore it to its destination. A modern builder, accustomed to the Regent's-canal and the trucks of the Great Western Railway, will look not without a smile on these primitive methods of conveyance. And it is unquestionable that the rate of speed bore a direct ratio to the facility of transport. Herodotus mentions a single block of stone, which 2,000 men were engaged nearly three years in transporting from the quarry to the temple, and, after all, it was not admitted into the building, in consequence of a man having been crushed to death while employed in turning it with levers. Yet when we think that some of these gigantic obelisks, transported from above the first cataracts of the Nile to Thebes, a distance of 138 miles, measured from 70 to 90 feet in length, and weighed nearly 300 tons, and that such masses were not unfrequently borne a distance of 1,800 miles, our contempt will change into admiration.

Respecting the implements of the Egyptian mason, our information, though scanty, is yet sufficiently accurate in its details. Their chisels closely corresponded in size and form to the pointed chisel and smoothing iron of the mason of our day. Their mallet was likewise nearly of the same shape, perhaps a little more globular in the head. The lever was known to them; and they were well acquainted with the use of the wedge; for their usual method of cutting large blocks from the quarries was either by wedges of metal, struck at the same moment along the whole length of the line, or by inserting wedges of dry wood into crevices cut for their reception, which, on being saturated with water, split the stone by their expansion. This last method, it is curious to observe, is common to almost every nation, and is still the method adopted in the granite quarries of Aberdeen and Peterhead for separating large masses from the rock. They had no conception of the use of the pulley. Their method of raising stones from one tier of building to another, was by means of a sort of wooden crane, something, we conceive, like that employed by the labourer in our day to riddle lime or sand. The plumb-line, the square, and the chalk-line, were commonly employed. Finally, we have evidence from the pictures we have mentioned, that the saw was among their instruments. We should have inferred this to be the case from the great regularity of their blocks, and the soft character of the limestone rocks; but it is made certain in the picture we have mentioned, from the representation of three figures in the foreground, carrying on their shoulders a saw of enormous dimensions. We may add, that the Phœnician artificers, who built the Temple of Solomon, and who derived all their knowledge from an intercourse with Egypt, appear to have used the saw in working their stones, a circumstance we do not recollect of having seen observed by Biblical critics and commentators, but which affords strong presumptive evidence that that sacred edifice was built of a soft description of limestone.*

The people who reared such monuments could not always have been slaves: 100,000 men armed with iron crowbars, and weapons still more formidable, could not always have been the victims of tyranny. Nor is it easy to see how any species of despotism could have influenced the spirit of mechanical genius so conspicuous on every stone. The Israelites it is true were consigned to bondage and trodden under foot, but the Israelites were a nation of shepherds and of

* "Pre-historic Annals," by Daniell Wilson, LL.D. Sir Richard Colt Hoare on the "Archæology of Wiltshire." "Chambers' Information," art. *Archæology*.

* Wilkinson's Works, passim. See for an account of the Building of Solomon's Temple, 1 Kings, chap. v. *et seq.*

foreigners, and bore the same relation to the highly-civilized Egyptians as a drover from the wilds of Badenoch bears to the skilled artisan of Birmingham. The truth is, this belief is founded on a gross misapprehension of the policy of the ancient Egyptians. The artisans constituted an honourable and highly-respected caste: the priesthood were as much indebted to their labours as the priesthood of the Church of Rome were to the secret society of freemasons. They were more respected even than the agricultural population, and are not for a moment to be associated with the slaves, who were made hewers of wood and drawers of water, and who were chiefly composed,—as, alas! they still are in our day,—of that unfortunate negro race, who seem shut out from all mercy and all freedom. It has accordingly been thought proper to attribute their erection to political motives. The country, it is argued, was possessed of an unusually fertile soil, and an uncommonly warm and sultry climate. It possessed a most superabundant population—a population whose domestic dwellings were hovels; who swarmed in enormous numbers, like amphibious animals, on boats on the Nile, and amid the bulrushes on its banks; who were scarcely obliged to till the soil for their sustenance; and who were content chiefly with vegetable food, and with water for their beverage. Such a population would be dangerous to any government; and therefore it would be the interest of the government to give them employment. Therefore these wonderful monuments were erected at the dictates of a truer policy than direct oppression,—the policy which prevents an idle people from becoming criminal, and sinks the tendency to treat with contempt their rulers in a feeling of deep veneration for the gods. We confess that even this theory does not satisfy us. Is it not more probable that the pyramids of Egypt must be referred to the same principle which led to the building of the pyramids of Mexico or of Hindostan? Diodorus Siculus expressly says that in Egypt every class had in view the shortness of man's earthly existence; that they attached no importance to earthly comforts, paid no respect to earthly splendour; that, while regarding the habitations of man as places of a transitory abode, they were indifferent to their squalor and wretchedness, but were on the other hand anxious to give the utmost strength and durability and splendour to the receptacles of the dead, and to the temples of the immortal gods. Nor do we see any tangible grounds for rejecting the evidence on this point of that credulous historian. For the monuments and tombs of the Pharaohs bear internal evidence that none but a religious people could have conceived them; none but a highly religious people could have executed them. We must never forget that civilization took early root in this singular country; that centuries before the Tyrian mariners swept the seas in their gilded barges, centuries before the rocks of Athens was the seat of a single tenement, centuries before Romulus drew with a copper ploughshare the boundaries of the imperial city, Egypt had reached the zenith of her extraordinary acquirements in government and religion, in science and art. These considerations will enable us to look at least with a clearer view on the origin of the pyramids.*

We hope our readers will pardon this digression. We should never tire of investigating into the condition of a people who, like the Egyptians, have exercised an important influence on civilization. It may happen that we shall have occasion to refer to these arguments when speaking of the condition of the people in our own country in our own day, and which, it may come to pass, will yet prove as interesting a subject to some future inquirer. We have only to add, that some attempts have been made to introduce the Egyptian style of architecture into this country. But we need scarcely say these attempts have failed. We would only caution our readers against forming their impressions of its character from the Egyptian-hall in Piccadilly or the Blue Boar in Smithfield. Such erections are as much out of place as the doctrine of metempsychosis or the transmigration of souls would be in the Cathedral of St. Paul's.

We come now to examine what may be called the classical age of mason-work, as evinced in the splendid structures of Greece and Rome. We will glance briefly at their principles of mural building, at their domestic buildings, and at the masonry of their magnificent temples.

The ancient buildings of Greece and Rome we may class with great propriety in three successive orders. First, we have those ancient structures denominated *Cyclopean*, from the mythus of Homer, who attributes their foundation to the sons of Neptune. These structures consist of vast and irregular masses of unhewn stones, put together without cement or mortar of any kind. The ruins of the citadels of Tyrus and Mycenæ, which are of this description, have remained in their present condition for 3,000 years, and present the most perfect specimens yet existing of the military architecture of the heroic ages. The next improvement on this method has been termed the *Irregular Polygonal* structure, from the circumstance that the stones are no longer unhewn, although no attempt is made to reduce them to the square. These lateral plane sides are sufficiently smooth to form a close joint, and the angular proportions of the one stone fitted the angular recesses of the other; and their faces are cut so as to give the whole wall a tolerably smooth surface. Examples of this second class are common in the Etruscan tombs, where, says Mr. Dennis, these blocks are arranged so as to present their ends and sides in alternate corners, in that style which builders denominate Old English Bond, or more vulgarly, "headers and stretchers."* The same description of masonry was used extensively by the Romans, and seems to have reached its perfection in the forum of Augustus. In the third species of mural building the blocks are laid in horizontal courses, but sometimes so irregular that none of the horizontal joints are continuous, but all the joints are accurately squared and fitted. Example of this kind of masonry is to be found in the celebrated Lion Gate of the ancient fortress of Mycenæ.

It is alike beyond our purpose to enter upon the endless controversies and conflicting opinions which have been held respecting these different classes of masonry: these have been treated of in other parts of our journal. Recent travellers and classical critics have laid down the general principle, that while undoubtedly such are among the most ancient specimens of mason work, it is quite a fallacy to suppose that the unhewn, the irregular polygonal, the emplecton or interwoven, the irregular and regular rectangular styles of construction, indicate successive steps in the progress of art and science—a theory held by all the Italian writers after Vitruvius. For although such massive structures would be built by a people ignorant of stone-cutting, or destitute of the necessary tools, they might be and were also erected in later times, simply on account of their adaptation to the purposes to which they were applied. Besides, as Mr. Dennis has pointed out, the character of the structure differs with the character of the materials. In the northern section of Etruria, where the rocks are difficult to be worked, consisting of hard limestone, sandstone, or porphyry, the walls are composed of huge irregular blocks, with small stones stuffed between the interstices. In the southern districts, on the other hand, where the rocks are composed of volcanic tufa, interstratified with limestone of a horizontal cleavage, which are easily worked, the masonry is more regular and less massive in its construction. Indeed, we need not go far to seek for proof of the accuracy of this reasoning. What would be thought of some future inquirer into the progressive civilization of Great Britain, selecting, as his instances of its mason work, the fences of county Wicklow, the drystane dikes of Aberdeenshire, the remains of London-wall in Aldgate, and the ashler foundations of Castle Baynard? Yet such is precisely the criticism which we find received by all writers on Greek and Roman antiquities, until the days of Niehbur and Becker, and the modern school.

* This question is discussed by Hope, "Hist. Essay on Architecture," vol. I. p. 14.

* "Cities and Cemeteries of Etruria." Mr. Dennis calls this masonry *emplecton* (from a Greek noun signifying to interweave), which Italian writers have hitherto applied to a different class of building altogether. See an able note in the Appendix, vol. I. p. 68.

ARCHITECTURAL CHARACTER.*

ARCHITECTURE has always been the exponent, and in a great degree the measure, of civilization; and if we study the history of our art over and over again, we shall see that architecture has always been the *child* of civilization, and never, as we sometimes hear, a *means* of civilization. Thus in our own country, in the thirteenth century, architecture was the property of the civilized few, and had no effect on the mass; whereas, at the same epoch in Italy, it was the spontaneous offspring of a highly civilized many. It is not a little curious to observe how, at the present day, both nations have changed characters. Such being the relations of architecture with civilization, it becomes not a little important to trace the difference between ancient and modern civilization, in order to adapt our architecture to the latter. This difference has been admirably defined by M. Guizot in his "Histoire de la Civilisation de l'Europe." The passage is worth translating. "When we regard," says he, "the civilizations which preceded that of modern Europe, whether in Asia or elsewhere, including even the civilization of Greece and Rome, it is impossible not to be struck with the unity which reigned there. They seem emanations of one fact, of one idea. We should say society belonged to some unique principle, which swayed it and determined its institutions, its customs, its creeds; in a word, all its developments." * * *

"In the civilization of modern Europe, it is altogether different. Observe it;—bring together your recollections of it,—it will appear to you immediately varied, confused, tempestuous. All the forms, all the principles of social organisation are there co-existent."

He then carries on the comparison in art and literature:—"No one will deny that as far as form and beauty of art are concerned, they (that is modern civilizations) are very inferior to the ancient; but as regards depth of sentiment and of ideality, they are more rich and forcible. We see that the human mind has been moved on a greater number of points to a greater depth. The imperfection of the form arises from this very cause. The more rich and numerous the materials, the more difficult is it to bring them back to a simple and pure form. That which makes the beauty of a composition of what in works of art we call form, is the clearness, the simplicity, the symbolic unity of the work. With the prodigious diversity of ideas and sentiments in European civilization, it has been more difficult to attain that simplicity or that clearness."

It would be a subject well worthy the pen of the art historian to illustrate this masterly passage by reference to works of architecture. Most interesting would it be to trace that wonderful unity visible in all the works of Assyria, Egypt, Etruria, or Greece, and then to follow the new elements distinguishable in the Roman, Byzantine, Gothic, or Renaissance styles, by which our art doubtless lost much in simplicity, perhaps in grandeur, and certainly in intelligibility, but gained as much in depth of thought and variety of expression.

Before I proceed I am anxious to define exactly what I mean by architectural character, because it is a term which we hear every day abused. Thus, we hear of buildings having a Gothic character or a Greek character, and this applied to buildings with really no character at all. Just imagine for a moment the ghost of Ictinus wandering uneasily up Bow-street, and being told that Covent-garden Theatre possessed Greek characteristics. Character in architecture is the expression of some great principle of composition; it may be the purpose for which the building is destined, the making evident the materials of which it is built, or the forcible exposition of some quality, such as height, breadth, strength, airiness, massiveness, lightness, or such like; but all these have nothing to do with its style. Style is never applied to a manner of building until all its character has passed away. As long as we attempt to build in character it matters naught what style we use, but once let us begin to think about style, and we shall find it hopeless to attain character. A good illustration

* From a paper read at a meeting of the Architectural Association.

of what I mean may be seen in the Imperial Assurance Office. This is by no means an inelegant building, either in form, proportion, or detail, and it is certainly not an exact copy of any old one, but it expresses nothing: no one, unless he were told, would have any idea that this was an English Fire Office. The architect has never dreamt of showing forth any important quality, but has only bent his mind to give to the world a handsome example of the Italian Palazzo style. Contrast this with one of Mr. Cockerell's banks, and you will see there evidence of an accomplished well-stored mind, with a new, fresh, and definite aim and view. It would be difficult, indeed, to fix a style to these buildings, exquisitely beautiful as they are. They have no antiquarian pedantry, or vulgar classical purity, but their object is evident to all: they seem to say to the passer by, "If you want your cheque cashed come in here." I am not railing now against the reproduction of buildings themselves: there is no need in this hall now to cry down copyism: we are all agreed on that point; but I am anxious to go a step farther, and deny the necessity, and even the desirability of imitating old *manners* of building, or (to use the cant phrase) of building in the *spirit* of the men of old. A direct plagiarism in verse is never tolerated for a moment, and I am happy to say, it is getting rather unpopular in architecture; but there are many examples of versification in *style*. There have been few great poets that have not been surrounded with a small fry of imitators. How often do we see stanzas after the manner of Spenser, or imitations of Juvenal or Horace? What a motley crowd once lisped in numbers, as they thought, like Pope; and what a crowd of scribblers now exist who put on a maudlin affectation of Tennyson.

There is a large open square in Grand Cairo, one of the most characteristic points of the city. Here are assembled crowds from all parts of Asia. Through here pass caravans from all parts of Egypt. Every inch of this vast piazza teems with character, and that character is silence—silence only broken by the tinkle of the bells of the camels that pass through, and the hot, blue sky overhead is as calm and tranquil as the rest. On one side of this square rise the white walls, dome, and minarets of an immense mosque. Of a most lovely form are these minarets, not pointed and extinguisher-shaped, like those of Turkey, but surmounted with graceful domes borne aloft on elegant arches. At intervals, on those minarets surrounded by exquisite open-work, and corbelled on fairy-like honeycomb works are small galleries. It is the month of Ramadan, and strings of lamps hang from minaret to minaret to be lighted in the evening. The ignorant stranger would be sorely puzzled by these galleries: at first sight they seem only capricious ornaments put there for no purpose. It is the hour of mid-day prayer: a turbaned muezzin appears in one of these galleries, and passing round from angle to angle, mingles his voice with others from the neighbouring mosques; then, and then only, breaking the silence in his own sonorous language—"Allah, illah Allah" ("There is no God but God, and Mahomet is his prophet"). This is character.

There is a little dirty square in London—a central point of foreigners. Here may be heard almost every conceivable language except Arabic. Every inch of this little hole teems with character, and that character is noise; and the black, stormy sky overhead is as tempestuous as the rest. On one side of this square rise the walls, dome, and minarets of a stuccoed edifice, painted four times in oil. These minarets are abridged editions of those in Cairo. I say abridged, because the first pages are torn out. They are not built from the ground, but hang aloft on iron girders. They have galleries something like the others, but parapets of iron-work. It is the month of November, and in consequence of the fog, lights are burning in the daytime. The enlightened stranger is sorely puzzled at these galleries, for here they are only capricious ornaments. It is twelve o'clock, and an individual in a black coat is in one of these galleries looking anxiously at the sky. It is a poor photographer waiting for the sun to come out, but even his voice is unheard in the din around him. Would any one believe that this edifice was meant for a Panopticon of Science and Art in the capital of England? This is style.

I make no scruple in criticising this building with freedom, because we all know that its style is no fault of its very clever architect, but was chosen by the committee who employed him. Their object was to produce an edifice which should be pre-eminent among the buildings of London for its novelty, and in their view novelty was only to be produced by dragging out of the past some old style with which the present was not yet acquainted. No man admires the exquisite Arabian style more than I do: no one wishes more that our architects would study it more diligently than they do; but for what purpose under the sun do we want minarets in Leicester-square? You might as well transport the Chinese god Fo at once into a square at Manchester to enlighten us as to the manufacture of silk or the cultivation of the tea-plant.

It is in vain to defend the style of the Panopticon, as being no more inappropriate than the Greek style, which prevailed many centuries before. Nearly every one is agreed now-a-days on the unsuitableness of pure Greek for modern use. All styles of remote antiquity are unsuitable, for the simple reasons, shown so clearly by M. Guizot, that the character of ancient civilization is unity of thought and of modern variety. When we take an extreme case, such as the front of the Egyptian Hall, or of Marshall's factory at Leeds, the absurdity becomes apparent in a moment. Egyptian, Greek, and Arabian are expressive only of this symbolic unity, and can, therefore, only be looked upon as three mighty integers in the varied world of thought, which ought to characterise our own architecture at the present day.

The next lesson that I have learnt from the French passage which I have taken almost for the text of my paper is this, that to express this wonderful variety, characteristic of modern civilization, no one style is sufficient. Architects are always crying out for the necessity of one style, though they cannot agree as to what that style shall be. They argue somewhat in this manner,—that all the good ancient styles were the works of men who built in one style only. So they were: this is only part of that unity to which I have alluded, but which exists no longer. Some styles were purely religious, like the Egyptian and Greek; and as there were no nonconformists in those days, the architecture resolved itself in the adornment of one beautiful thought. The architects of the Middle Ages built in one style: the Cinque Centisti of Italy built in one style; but those were days when differences of thinking were only settled by the sword and shield, and public opinion became a legislative enactment. It seems not unnatural that, in those days, the arts of peace should have flowed on in one only channel, without attempting to stray beyond its banks. The aim of these men was to render this one river as beautiful as possible, and they succeeded. The most recent examples which I can quote of the practice of building in one style only, are the edifices of the time of George II. where, as Mr. Disraeli informs us, "Parliament prescribed even the façade." Such are Baker-street and Gower-street. Blessings on them! The very fact of architects not being agreed as to the adoption of a style is of itself a strong proof that no one style can be adopted; and, really, if we think for a moment, we shall soon see that one style alone would be as inexpressive of the present time as a variety of styles would have been of past ages. We live in a time and in a country when and where the greatest freedom of thought is tolerated, nay, encouraged; when many of our thinkers arrive at the same end by different roads, or arrive at different ends by the same road; and the limits to each train of thought, though widely diversified, are equally valuable. We neither think in one style, nor act in one style, nor write in one style, for the simple reason that one style would not suit our purpose. When Leverrier discovered his new planet, from observations on the perturbations of the orbit of Uranus, he thought in one style: when Professor Wheatstone invented the electric telegraph, he thought in another. The one thought was the deduction of existing facts from existing natural phenomena: the other was the application of existing natural phenomena to a practical use. Had these gentlemen thought in the same style, neither would have attained their end. We all remember the old tale of the Cambridge wrangler, who always thought in the same style on all subjects, and who one day attempting to find his way across an alpine pass, by means of mathematical calculation, fell down a precipice. This is exactly what your one-style men want us to do now. Architecture, in its highest sense, is the expression of every-day thought,—is thought made tangible by imagination, and then handed down to posterity as an illustration of history. And this present motley world of good and evil, with evil in every form, and good in as many, with extremes of both, and extremes of everything else, extremes of ideas, extremes of habits, extremes of wants, is it not worth shadowing forth in brick and stone, as in canvas, prose, or song? How can it be done in one style only?

There is another school now existing, who while great sticklers for style as such, yet advocate at the same time a mixture of styles. They would not scruple to use Perpendicular tracery with Early English mouldings, or to crown a Greek pediment with Gothic turrets, provided always that the beauty of the composition be not injured. At first sight their reasoning seems plausible. It seems perfectly consistent to combine together the beauties of the past to make the present more perfect. Why, then, is the effect generally so unsatisfactory? Because, where we have been long accustomed to see certain forms in certain combinations, the mind begets a taste for these combinations. An anachronism in a historical romance is almost as offensive as one in real history. It seems impossible that any composition made up of old styles can ever give pleasure. It is like a poem written in several languages, and every one a dead one.

Let us now try and trace, if we can, the origin and history of this now generally received practice of building in past styles. The Pagan artists did not build in past styles: the early Christian artists did not build in past styles: the Gothic artists did not build in past styles; and for that very reason left to posterity styles of their own. These men not only did not build in past styles, but rather seemed sometimes to *despise* past styles: they looked upon them rather as we look upon old wives' tales of the good old times gone by, and always tried to produce something very different. Just compare English architecture of the twelfth century with that of the thirteenth,—the one low, broad, and bulky, even to clumsiness; the other tall, narrow, and light, sometimes even to flimsiness. I can well imagine a sturdy architect of the thirteenth century railing at the architecture of his massive predecessors in good set terms. It is evident to every student that these men only looked upon Norman architecture as something to avoid.

The first men who seem to have adopted the idea of building in style, were the Italian Cinquecentisti. As far as we know, Brunelleschi was the first foreign architect who travelled to Rome for the purpose of study. The architecture of all Europe was then Gothic: the manners and customs of all Europe were Gothic, although Italy was perhaps more enlightened than the rest of it. A singular distaste for Gothic forms was growing up in the minds of the rising artists of Florence, which became more violent every day. Vasari, who wrote only a little more than half a century later, winds up a paragraph on Gothic architecture in this strain:—

"Heaven defend any country from coming to such an idea and style of work, which is, when compared to the beauty of our modern buildings, only so much deformity deserving no further mention."

Having this horror of Gothic, it was not unnatural that Brunelleschi, Alberti, and their contemporaries took violent means to change it; and here we may learn a salutary lesson, that a total change in architecture can never be effected suddenly, through the agency of man's unassisted reason and imagination. Instead of gradually developing their old architecture into something else, these men sought back in the

recesses of antiquity, and gradually substituted revival for imagination, style for character.

This was an age characterised by an exaggerated taste for classical literature: true art became infected with pedantry: Vitruvius was enthroned: architecture had rules set to it; and great professors wrote books about intercolumniations, modules, minutes, and orders, just as we write now-a-days about Early English, Decorated and Perpendicular. From that time to this, architecture has gradually degenerated into a science. We have revived, and re-revived, but how little real, genuine character have we produced.

Now, I am fully aware that for an architect to throw overboard styles altogether would, in these days, be something little short of madness. The disease has sunk so deep into the system, that it cannot be cut out with a knife. Architects have talked so much about styles, have criticised so much on the style principle, that the public have begun to think that there is something in it. Our clients, like the Panopticon Committee, generally choose a style for us, and we must obey. Happily, however, our employers are not always learned; and many things will do for both Gothic or Italian, which need not bear any similarity to either.

Let us endeavour, as much as we can, to cease talking about style when we criticise modern buildings: let us call them tall or short, light or massive, handsome or ugly, but not classic or Gothic; and let style be used as a mere historical term. Above all, let us cease clamouring for a new style: we want not one new style, but one hundred; and that is what distinguishes our present age from all others so forcibly. What I have always loved most in my own art, is its power of illustration; and in this respect I feel quite certain that character has never been pushed to its utmost limit. Not only would I endeavour always to make a building express the purpose for which it is intended, but I would go still farther. It may seem an ambitious fancy, but had I a house to build for a great and good man, I would try and make it tell something of him who dwells inside. How much I have regretted that the houses of Wellington or Peel should not have one stone in them worthy of the illustrious dead! I say not that their beauty would add one iota to the fame of these great men, but how a real grand characteristic work of art would be gilded by the memories attached to it. "Ornanda est enim dignitas domo, non ex domo tota quærenda; nec domo dominus, sed domino domus honestanda est." And this is the only kind of association about which architects need trouble themselves.

We are in the habit of hearing a good deal about the associations of past styles; but with what are they associated? With everything that is the very antipodes of the present. Let us suppose that I had a house at Camberwell to build for a noble-minded British merchant. Somebody has been talking to him about the Italian Palazzo style, and the noble associations of Italian history. I would just request my client to turn to the pages of Machiavelli, or Sismondi, or the autobiography of Benevenuto Cellini, or a satire of Salvator Rosa, to show him that his vaunted associations were those of oppression, murder, lust, rapine, envy, hatred, malice, and all uncharitableness. The art we want is not the art which tries to put a mask of splendour on a pompous luxury derived from popular oppression. And what are the associations connected with Gothic? Far more respectable, I admit. The monks were neither barbarians nor homicides, but all their doings were of a passive order; whereas if there is anything that is peculiarly characteristic of the present age, it is its activity.

Let us always bear this in mind, that the architecture of the present day is emphatically the architecture of the people. Vast palaces for princely residents are now but seldom required; they have given place to houses for the million. The days of cathedral building have passed away, perhaps never to return; but never probably was there an age when more parish churches were raised. Time was, when great men or rich monks provided the architectural banquet for the many,—made them swallow it whether they would or no—and often made them pay for it into the bargain. Such is not the case now. The appetite of the many has been sharpened by civilization: they are hungry now, let it be our part to give them fresh-killed meat.

The wants of past ages were the wants of pagan sacrifice, of pampered luxury, or of large monastic establishments. From these roots sprang various styles. How can the plant flourish when the root lacks moisture? Think of the wants—the new wants, the intellectual wants, the moral wants, which have sprung up in this our day; the school, where the lowest mind may learn to think; the lodging-house, where the lowest mind may learn to live; the church, where the lowest mind may learn to die; the railway, where the poorest travel; the factory, where the poorest work; the hospital, where the poorest are cured; the picture-gallery, the museum, the park, the theatre, the Crystal Palace, where all may obtain the luxury of amusement. These buildings are England's pride, are bright phases in England's character, are parts of that character which we have to illustrate. How shall we do it? Shall we do it in style? Until we can resuscitate the immoralities of Jupiter, the tyranny of Lorenzo, the worship of St. Francis, or the ambition of Wolsey, farewell to the styles, the spirit, the associations of the past.

> "Heed no future, howe'er pleasant:
> Let the dead past bury its dead.
> Act, act in the living present,
> Heart within and God o'erhead."

And though perhaps there is nothing wrong in the architecture of the present showing in itself some traces of the architecture of the past, for the simple reason that the past is in itself always part of the present, yet let us remember strongly that no satisfactory whole can ever be made by the mere exaggeration of one part only. Let us regard ancient styles only as insignificant parts of modern character—that character to which style is only a stumbling-block,—that character which is as varied as style is limited,—that character which does not coop itself in a tattered robe of antique learning; but which shows itself most in energetic action, surmounting real difficulties by vigorous will, and not solving imaginary problems by reference to old books.

ALFRED BAILEY.

MR. RUSKIN'S SECOND LECTURE ON ARCHITECTURE.

THE lecturer commenced, according to the *Edinburgh Courant*, by cautioning his audience against the meaning generally but erroneously attached to the terms romantic and utopian—two of the devil's pet words whenever anything great or good is to be ridiculed or opposed. By romantic we ought not to understand something fictitious, but rather something fresh, young, virtuous, or beautiful. So understood, our romantic feelings ought to be fostered and encouraged. Cervantes, Mr. Ruskin said, by the ridicule which he threw over some of the noblest feelings of our nature, had done more to repress and discourage the good and the true than Voltaire or Byron. We are also apt to misapply the term utopian: as generally understood, we had better express our meaning by the term unpractical. If a thing is physically impossible, we should let it alone; if it is possible and proper to be done, we ought to strive to the utmost to do it. We may not be able to put a complete stop to drunkenness and misery in the streets; but the difficulty is not our business—the work is. We may not be able so to arrange that every child in our country shall, from its earliest years, be educated in the knowledge of the Bible and of God; but here also we must look to the work and not to the difficulty.

As to the practice of modern and that of Gothic architects, in regard to their decoration of buildings, the Gothic builders always ornamented the bottom of their edifices (?), whilst our modern architects decorate the top. The former placed their most highly-wrought sculpture where it could be seen and appreciated, whilst the latter put theirs under the cornices of buildings, where its effect is partially or totally lost. As an example of this, which he called a modern abuse, he named the new Army and Navy Club-house, in London. An amusing but truthful illustration of the prevailing style of ornament in our modern street architecture, consisting merely of squared stones, was exhibited by Mr. Ruskin.

The truth to nature of the Gothic builders in their flower and leaf tracery, was pointed out and illustrated by a drawing from the front of Rouen Cathedral. There was great variety in the Gothic sculpture: in this it has a material advantage over the Greek. The Greek sculptors were unrivalled in all that regarded the human frame, but in animal delineation they were not equally successful. Mr. Ruskin had been examining the Institution on the Mound—a very good specimen of Greek architecture—and he had counted sixty-six lions' heads along the top of it: these were of the true Grecian type—a perfect caricature of nature—as Mr. Ruskin illustrated by a magnified drawing of one of them. This was contrasted by a drawing of a tiger's head after nature by Mr. Millais.

Several examples of Gothic windows, with the part above the horizontal lintel filled in with stone, both plain and sculptured, and suitable for adoption in our street architecture, were exhibited and commented upon. One very graceful form of a Gothic window might be easily adopted by us, as changing our present windows into such a form would only cost about 30s. for each window.

In buying anything we should always consider whether we were doing real good to the producer,—whether our buying it was likely to induce him to lead a healthy and a happy life, or the reverse. Thus, when we bought an engraving, we bought what had been produced by the long and toilsome labour of the engraver, sitting in a close room amid noxious fumes, and impressing upon steel or copper, by a variety of minute lines, the production of another's mind; whereas, when we bought the rudest water-colour drawing, we were encouraging its producer to go out into the fields, and draw from nature, and thus to lead a healthy and happy life. In buying, therefore, we should sometimes overcome our own preferences, and look rather to the effect, good or bad, which our purchase may produce upon others. We must not encourage our workmen in the sculpture of Grecian lions' heads after a set pattern, but we must give them something better to do,—we must send them to nature, to study at the fountain-head.

Mr. Ruskin lamented that the beautiful edifice of Trinity College Church, one of the finest ecclesiastical buildings Edinburgh possessed, and of which the stones are lying numbered and ready for the workmen, was not likely to be rebuilt. The builders of the fifteenth century built a great deal better than anything we can construct as a substitute for their work. It is sincerely to be hoped that the town-council will act upon Mr. Ruskin's advice, and for once sink their utilitarian and sectarian prejudices.

The lecturer concluded by saying that he had been often, and in many quarters, accused of presumption in daring to place his opinion in opposition to the practice of the last 300 years. This charge might have been true had he ventured to rely upon anything merely his own, but he did not do so; he relied upon, and he appealed to, common sense, reason, and nature. He appealed for the truth of the principles which he had been advocating to the common sense and the reason of his audience. They must not, however, go from him to a great architect and ask his opinion, or accept his guidance. It would be too much to expect such a man to perceive, or to confess, the falsity of the principles in which he had been educated. It might be said that it was impossible that he (Mr. R.) should be right in controverting the principles and the practice of the last 300 years; but let them remember that, in a far more important matter, and for a much longer time—for 1,200 years—there had been error and falsehood in the separation of the two roads which led to heaven and to hell.

ST. MARTIN'S-IN-THE-FIELDS LIBRARY, &c. FOR THE WORKING CLASSES.—The fifth of a series of lectures proposed to be given for the season, 1853-4, was delivered on 22nd instant, by the Rev. John Barlow, M.A. and was listened to by all present with great interest; the subject, "The Chemical and Physical Properties of the Atmosphere," being illustrated by some pleasing experiments, which were prepared by Professor Faraday.

ST. MARTIN'S MUSIC HALL: VESTIBULE.

ST. MARTIN'S HALL, LONG ACRE.

Mr. Hullah's Music Hall, in its complete form, will be opened with a musical performance on Thursday next, December 1st, and we avail ourselves of the occasion to give views of the Great Room and Entrance-hall and some particulars of the structure. It has been erected from the designs of Mr. William Westmacott: Messrs. W. Cubitt and Co. were the builders. The foundation-stone was laid June 21, 1847, by Lord Morpeth. A portion of the building was first used October 10th, 1849, and a part of the Great Room was opened February 11th, 1850.

The plot of ground on which St. Martin's Hall stands is a parallelogram of 149 feet in length and 61 feet in width, the north side abutting on Wilson-street, Hanover-street, and the east side on Charles-street, Long-acre; this plot being connected with Long-acre at the south-west angle by another 44 feet in length and 24 feet in width. The principal entrance is from Long-acre, another from Wilson-street, and there is a third from Charles-street. The ground-floor consists of an entrance-hall (44 feet by 22 feet) leading to the principal staircases, a lecture-room or lower hall (51 feet by 41 feet), a library (32 feet by 29 feet), available also as a committee or class room, two class-rooms (one 31 feet by 19 feet, the other 26 feet by 19 feet), the secretary's office, a ticket-office, and a corridor extending the whole length of the building.

A mezzanine floor affords a ladies' room (24 feet by 22 feet) accessible by a separate staircase.

The first floor is chiefly occupied by the Great Hall, which is 121 feet 6 inches long, 55 feet 5 inches wide, and 40 feet high; the length being rather more than double the width, and the height a third of the length. At the east end is the orchestra or platform, to be reconstructed after some experiments have been made in the matter of *sound*; at the west end, a gallery, 14 feet deep; and on part of the north and south sides, other galleries, each 7 feet deep. The ceiling or inner roof is flat in the centre, sloped at the sides, and divided into panels framed in wood. The shields on the stone corbels are emblazoned. The hall is warmed by four of Mr. Leslie's patent stoves in circular openings within the fire-places shown in the view. Our engraving represents the hall as seen from the east (or orchestra) end. The openings seen above the gallery light a passage to upper rooms. Below is a bas-relief by Mr. Thrupp.

The principal staircase leading to the Great Hall is very commodious and satisfactory in effect.

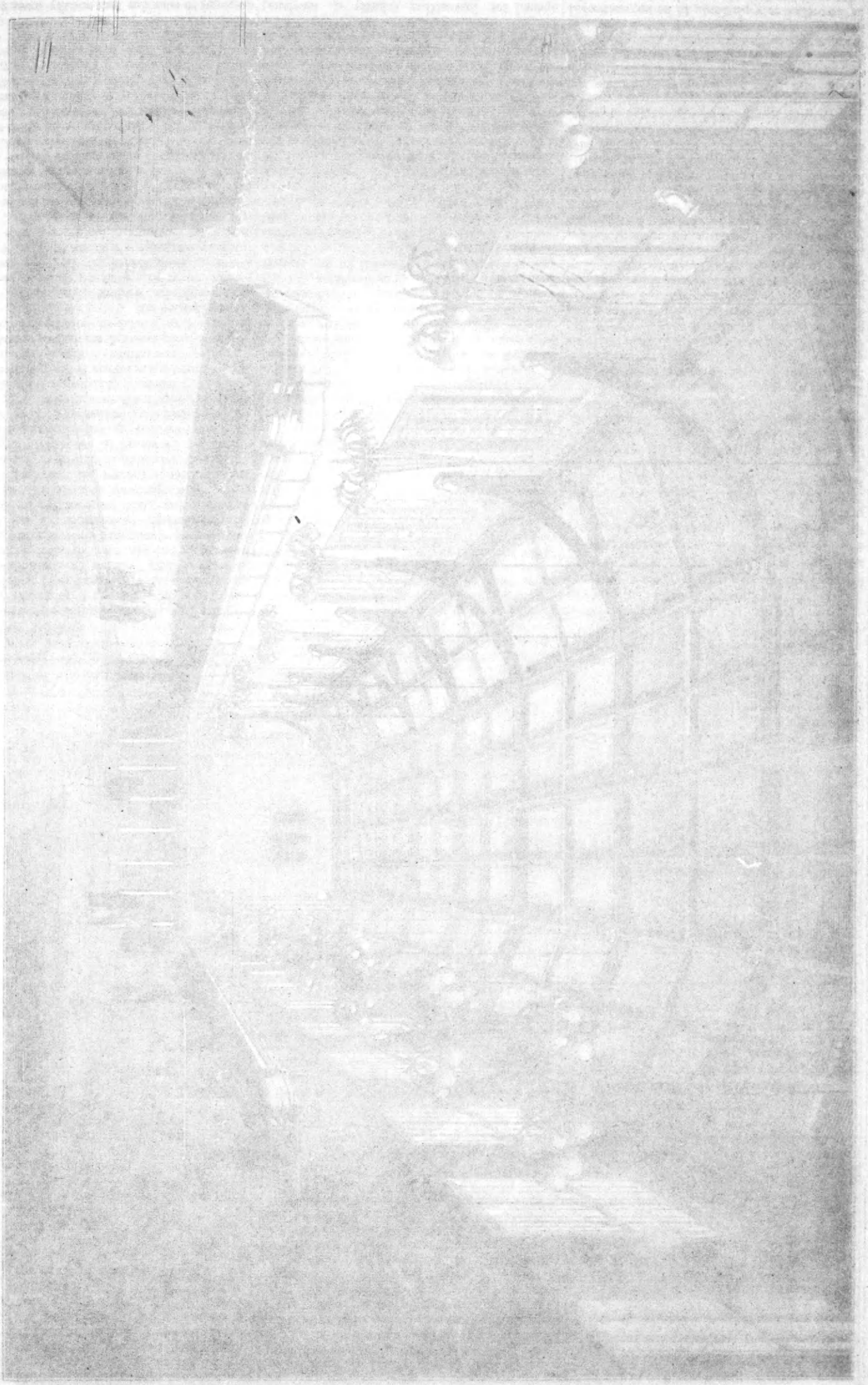
The Singing Classes, for whose especial use St. Martin's Hall has been erected, originated in a proposition made in the autumn of 1840, to the Committee of Council on Education, by Mr. John Hullah, that means of improvement in vocal music should be afforded, at a cheap rate, to the schoolmasters and Sunday-school teachers of London. Although their lordships (having then no funds at their disposal for the *support* of schools) were prevented from giving any pecuniary aid to the undertaking, they were pleased to regard it "with satisfaction and approval," and their secretary (now Sir James Kay Shuttleworth) was instructed to afford Mr. Hullah "such encouragement" as was "consistent with their regulations."

Within a few months of the opening of the "Singing-school for schoolmasters" in February, 1841, it was found necessary to provide for the instruction of 400 persons—all engaged in tuition in elementary schools—and eventually the demands for admission to the school, from persons not so occupied, became numerous enough to warrant its being thrown open to the public. At the same time, classes were opened for instruction (chiefly of teachers) in other subjects—Mulhauser's method of writing, the phonic method of reading, mental arithmetic, and more particularly model drawing, under the direction of the late Mr. Butler Williams. These experiments—expressions, one and all, of a desire to improve the condition of elementary schools and the status of their teachers—were attended with very unequal success; and some of the "methods" essayed may, perhaps, now be regarded only as materials for a history of "pedagogy." The prosperity, however, of the singing-school was such as to enable it to supply the large pecuniary loss entailed by these classes connected with it, under the designation of the "School of Method," which, after its removal from Exeter-Hall to the Apolonicon Rooms, in St. Martin's-lane, became again exclusively a school of vocal music, having survived a very expensive companionship, an unusual amount of misrepresentation, and an excess of popularity more dangerous than either.

It would be without the province of this journal to enter on any discussion as to the merits or demerits of Mr. Hullah's method of teaching singing. We are told that rarely during the existence of his schools (now in their *teens*, having been opened early in 1841), has the number of pupils in attendance on them been less than 1,000; but this we have no means of verifying. One thing, however, is certain, that he has been the first person to erect a great room expressly for musical purposes in London; and it appears, further, that he has been enabled to do this chiefly by the assistance of personal friends and pupils,—in a word, by the confidence of those who, being most intimately acquainted with his modes of proceeding, would seem to be the best able to judge of them.

We attach great importance to a widely-spread cultivation of musical science, and are disposed to consider that society owes much in this respect to Mr. John Hullah.

ST. MARTIN'S MUSIC HALL, LONG-ACRE.—Mr. W. Westmacott, Architect.



SCULPTURE AT HOME.

We have often lamented how rarely sculpture is found in the houses of even the wealthy, and have urged that although to the middle classes the cost of such works would naturally interfere with their attainment, yet that galleries of *casts* of the works of our sculptors might be formed without great outlay, and that even in small residences nooks for two or three figures, and wall space for a bas-relief or two, may always be found. It was with great pleasure we stumbled on a practical realization of the idea a short time ago at Firfield, in Addlestone, the residence of Mr. and Mrs. S. C. Hall. There, in a glazed gallery about 80 feet long attached to the house, amidst flowers and climbing-plants, and hanging ornamental pots from France and Germany, Mr. Hall has gathered together a large number of casts of the best works of modern times. Here side by side are Foley's "Ino and Bacchus," Power's "Greek Slave," Bailey's "Eve," Schwantaler's "Nymph of the Lurley," Westmacott's "Pandora," Rauch's "Victory," McDowell's "Early Sorrow," Marshall's "Dancing Girl Reposing," Engelhard's "Lurley," and many others, while specimens of Gibson and Bell are on their road, and Reitschel, Thorwaldson, and Wyatt shine in low relief on the walls.

The house itself is full of "auld knicknackit things," and works of modern art: in the garden are trees planted by Moore, and Lady Morgan, and Mrs. Jameson, and Jenny Lind (the St. Cecilia of to-day), and Miss Edgeworth, and Fredrika Bremer, and Catherine Hayes, and Macready, and Lover, while everywhere are seen evidences of good taste and kindly feeling. We must not be led, however, into saying what might be disagreeable to its owners: our object simply is to point attention to what we should like to see widely imitated. Were it so, the sculptor's art in England would receive an impetus of immense value. There is no reason the high enjoyment sculpture affords should be confined to the rich: but the public must first learn to see beauty in severe form before the example will be largely followed.

PROVINCIAL NEWS.

Watton.—A new town hall has just been completed at Watton, in Norfolk, and was opened on 3rd inst. The building, which is after a plan designed by Mr. E. B. Lamb, of London, architect, is in the style which prevailed during the latter part of the reign of Henry VII. and is of red and white brick, with Caen stone window dressings. The ground floor includes a reading-room, measuring 20 feet by 14 feet; a waiting-room, store-room, and other offices. From the ground floor is an ascent by a stone staircase into the magistrates' room, and into one intended for a corn-hall, concert and assembly room, for public meetings, &c. The magistrates' room measures 20 feet by 17 feet. The hall is 53 feet long by 26 broad, and 32 feet high. This useful structure owes its existence, we are informed, to the efforts of a small "mutual improvement society," and has been constructed at a cost of 900*l.*,— 600*l.* raised by subscriptions, and the rest by shares.

Mildenhall.—The church here has been restored, and was reopened on Thursday in last week. By the reopening of the west entrance, removal of the organ-gallery, arrangement of the pulpit and desk on either side of the chancel arch, and erection of new roof to chancel, the eye entering at the west door, or tower-porch, will now at once embrace the whole of the interior. The arch of the east window, the centre of which is occupied by the symbolic oval or elliptical aureole, has been replaced with new masonry where needed. The floor of the church has been relaid upon sleeper-walls, and its old pews replaced by open seats. There are now 905 sittings, 477 free. The large west window is entirely new; and the lower story of the tower has been converted into a porch, with glazed screen opening into the nave. The works were principally executed by Mr. James Rattee and Messrs. Peck and Sons, of Cambridge. The total cost of the alterations has been 1,020*l.* 9s. 5d. Among the ancient architectural details discovered and preserved, is an assemblage of arches at the west corner of the north aisle, being the doorways and windows of the Lady Chapel, which was in an unusual position over the north porch.

Wootton.—On Friday in last week a new church was opened in this village. The edifice has been built from the ground, on the site of the old church, at the expense of the Hon. Mrs. Howard, the patron and proprietor of the parish, who will, when the steeple has been completed, have expended nearly 6,000*l.* upon the building. The architect is Mr. Salvin, whose plans and designs were carried out under the personal superintendence of the vicar, the Rev. W. W. Clarke.

Uxbridge.—It is said to be intended to take up all the old drain-pipes in this town, and lay down larger ones in their stead. The sewage is to be kept clean by a continual flow of water, to be supplied by means of waterworks. Villas and cottages, according to the *Windsor Express*, "are being built almost like magic in every available spot, and they are no sooner completed than occupied."

Eversley.—Parochial schools have been erected here through the instrumentality of the Rev. C. Kingsley, the vicar. Mr. J. B. Clacey, of Reading, was the architect employed. The style of the building is Elizabethan, and it comprises school and class rooms for about 130 children, with residence for master and mistress attached. Over the entrance to the class-room the architect has inserted a scroll, with the inscription,—"The eyes of the Lord are in every place, beholding the evil and the good." The site was given by Sir W. Cope, lord of the manor; and the funds were raised by subscription.

West Bromwich.—At the last weekly meeting of the board of guardians, seven estimates were received for surveying the town and furnishing plans, with valuation of the rateable property, and assessment thereon. The guardians determined upon accepting the joint tender of Messrs. Fowler and Son, and Mr. James Cookson, for 800*l.*

Chesterfield.—To carry out the project of a new market hall here it is proposed to raise the necessary sum, 10,000*l.* in 1,000 shares of 10*l.* each; no one to take more than ten.

Leeds.—The church of St. John the Baptist, New Wortley, was consecrated on Thursday in last week. This is the second of the two district churches initiated by the Rev. Dr. Hook, vicar of Leeds, about two years since, by a subscription of 2,000*l.* St. Jude's, Pottery-fields, consecrated a few weeks since, is the other. St. John's consists of nave, 68 ft. 6 in. long by 22 ft. 3 in. wide, and 44 ft. high to apex of roof; aisles, 68 ft. 6 in. by 12 ft. 8 in.; chancel, 36 ft. 3 in. by 20 ft.; south transept, from chancel, 22 ft. by 22 ft.; north and south porches, each 9 ft. 5 in. by 8 ft. 2 in.; vestry, 13 ft. by 10 ft. and tower, 12 ft. square inside. There are 700 sittings, all free. The building is warmed by Hazard's patent apparatus. The style of its architecture is the Geometrical, from the designs and under the superintendence of Mr. Dobson, of Leeds. The nave is divided into five bays by octagonal stone piers, moulded caps, bases, and arches, and is covered with an open timber roof formed with curved braces resting on stone corbels. The tower and spire rise to the height of 130 feet. The aisles contain in each bay a three-light window. The west window is of four lights, the transept four lights, and the east window of five lights. The roofs, seats, choir stalls, altar rail, communion table, and sedilia, are all of deal, stained and varnished; the pulpit and lectern of carved oak. The floor of chancel, from altar rail to east end, is laid with Minton's encaustic tiles. The contractors were—masons and carvers, Messrs. Mawer and Whitely, of Leeds; joiner, Mr. John Chaffers; slater, Mr. John Preston; plumber, Mr. John Garlick; plasterer, Mr. W. H. Barker; painter, Mr. Swithenbank; and ironfounders, Messrs. Singleton and Tennant. The cost of the building was 2,500*l.*; total, including land and repair fund, 3,458*l.*

Berwick.—A memorial to the Duke of Northumberland has been in course of signature here, praying his Grace to construct a harbour of refuge on the Magdalen-fields' shore for the accommodation of the Greens' fishermen. The harbour would also afford sufficient accommodation for larger vessels. The cost of the proposed scheme is estimated at about 4,000*l.*

Glasgow.—The extensive ship-building sheds at the establishment of Messrs. Tod and M'Gregor, at the mouth of the Kelvin, are nearly completed. The sides of the conjoined aisles, if they may be so called, are formed of piles of Canadian pine, 80 feet in height, supporting a framework of iron, timber, and glass, surmounted by a wooden cornice. Similar piles to the lateral rows run along the central division of the parallel sheds. The roofs, of corrugated galvanised iron, are arched, 65 feet in span, and lighted by longitudinal sections, glazed with Hartley's patent rolled plate glass, which is said to be of sufficient thickness to resist the pelting of the severest hailstorm. One of the sheds is 320 feet in length, while the other measures 266 feet. The object of the erection of such sheds is, of course, to enable the ship-builders to carry on their operations at all seasons without interruption from the weather.

THE CATHEDRAL OF SPEYER.

The restoration of this fine mediæval building has been going on for several years, but now the whole scaffolding of the interior has been removed, and the eye ranges free in the wide, wondrously-splendid decorated spaces. Now, only one can judge of the result produced by eight years' steady and persevering work, under the guidance of skill and science. It is especially the twenty-four paintings on the walls of the middle nave, which attract the notice of large crowds of people gathered thither from far and near. It is a cycle of representations from the life of the Holy Virgin, which, preceded by six Biblical paintings in the nave of the cathedral, is concluded by the crowning of the Virgin in the Vault of the Apsis. The works of the high altar in the Byzantine style are not yet ready, having required more labour than had been anticipated. The restoration of the façade of the Cathedral in its ancient form, with two turrets at the west side, has been also sanctioned by the present king; and the choice of the architect has been left to King Ludwig, of Bavaria. He has selected M. Hubsch, building director at Karlsruhe, an artist said to be known as one of the most successful in the round-arched style. Besides its architectural grandeur, the dome of Speyer is renowned for containing the monuments of eight German Emperors, amongst them Rudolph of Hapsburg, the founder of the present dynasty.

PETITION TO THE PRIVY COUNCIL AGAINST THE USE OF STAGE-COACHES.

The following minutes of proceedings, "At the Court at Whitehall, the 20th of November, 1672; present, the King's Most Excellent Ma^{ty}" &c. extracted from the "Council Register" (ch. ii. vol. x. p. 337), and for which we are indebted to Mr. Robert Lemon, are very instructive and curious, showing as they do how ignorance and personal interest have ever fought against improvement and progress:—

"The humble petition of ye masters and wardens and governors of ye severall companys of sadlers, cutlers, girdlers, cordwayners, curriers, loryners, inholders, farriers, spurriers, and watermen of the Citty of London, presented with the approbation and by the consent of the Lord Mayor and Court of Aldermen of the said Citty, on behalf of themselves and ye rest of ye members of the aforesaid severall companys, and divers other tradesmen and hackney coachmen, in the Cittys of London and Westminster, the burrough of Southwarke and countys of Midd^{x} and Surrey, and other places within this Kingdome, being this day read at the boord, and there being at the same time likewise presented severall petitions from the cittys of Norwich, New Sarum, Bristoll, and Glocester, and from ye townes of Northampton, Daventry, Marleborough, St. Alban's, Maidenhead, Staynes, and Theale, All setting forth, that by reason of the many running stage-coaches and carravans of late yeares set up, for carrying passengers to almost all places within this kingdome, not only pet^{rs} trades are lost, and above 100,000 familys reduced to beggery already, and many thousands more like suddenly to fall upon ye severall parishes wherein they dwell, for mam-

tenance, but many other great mischeifes to this Kingdome are occasioned, for by them ye roads are spoyled, the rents of all inns lessened, inholders made unable to pay their rents and dutys, or to provide fit accomodation for their guest, or to releive the poor, as formerly they were wont to do, the consumption of all sorts of provisions for man and beast are prevented, the rents of gentlemen's estates brought downe, the breed of good horses destroyed, the keeping of great numbers of horses, both in ye Citty by merchants and others, and in the country and all great townes of England, is left off, which hinders ye consumption of vast quantitys of horsemeat; the breeding of many thousands of watermen hath been hindred, and those that are bred are greatly hurt and discouraged by them; his Ma^{ties} subjects, unused to riding, are growne carelesse of attayning to good horsemanship, a thing so necessary for them to understand, in order to their owne and ye kingdomes service; the consumption of woollen, leather, and other manufactories of ye kingdome, are greatly lessened, whereby the handicraft tradesmen aforesaid, who formerly lived well, helped to consume provisions, and releive others, are for want of worke ready to starve. They ruine the hackney coachmen in London, who are licensed and pay five pounds pr. ann: for their license, and do greatly annoy and breake the streetes, without paying anything towards reparation. The revenue of Excise and Post-office is much abated, the kingdome is weakened, and the subjects are made unfit for his Ma^{ties} service, and, therefore, praying the said coaches may be suppressed, or such order speedily taken therein as shal be thought most conducing to the good of his Ma^{ties} subjects.

It was ordered by his Ma^{ty} in Councill, that the matter of these petitions be taken into consideration at this boord on Wensday, the 4th of December next; whereof the pet^{rs} are to cause timely notice to be given to as many of ye cheif owners of ye hackney stage-coaches and carravans that travell ye northerne, westerne, and other great roades of this kingdome, as they conveniently can; and that ye said keepers of coaches and carravans, as also some person or persons appointed by the pet^{rs}, do give their attendance at ye time and place aforesaid; and it was further ordered that both partys have liberty to bring with them councill learned if they please."

SEWAGE AND DRAINAGE, AND A PLAN OF SEWERAGE.

I HAVE just read the letter, under the above heading, in your number for October 15, from "Henry G. Cooper." I agree with much that he says about the separation of drainage and sewage; but it is evident that he has not had all the data respecting metropolitan drainage, &c. which ought to be considered.

In the first place, is he aware that a very large portion of the area to be drained lies below the level of high water in the Thames? Wherever there are "depressed districts," as they are called, gravitation cannot be relied on to carry off drainage, and therefore it must be got rid of artificially. It would not do, according to him, to run it into his proposed receptacle. In the next place, he seems to think that it is possible to carry off the sewage in a moderately diluted state. One objection to this, with the proposed three-inch pipes, would be the risk of their being choked. A small pipe like that will answer very well where there is a good flow of water in it and it has a good fall; but it could not be relied on without a good flow. Another objection is, that you cannot avoid much of the dilution which goes on at present. All the house "slops" and dirty water, &c. must go off by the drains. You cannot alter the habits of the householders in this matter. Another objection is, that if you could avoid the dilution you ought not to do so. There is far too little water fouled in houses at present. We should be much better off if every man, woman, and child used at least ten gallons of water every day in washing. How few wash their bodies all over with soap and water every day; one of the best securities against ill health that we could have!

But if people go on with only their present stinted allowance of water, how large must his receptacle be? Taking the population of London at only 2,000,000, by cutting off suburbs, and allowing them only a bucket of water each daily; here is a supply of about 2,000,000 cubic feet of drainage every day. It would scarcely be safe to have a receptacle of less size than sufficient for a six weeks' supply. Could this receptacle be of less size than 100 acres 20 feet deep? And when the first six weeks were ended, what could be done with the collected sullage?

It has been my unhappy fate to spend many hours in examining proposals for the drainage of London, not a few of which, to those who know nothing of the difficulties involved in it, would have seemed far more promising than Mr. Cooper's; but when I brought them to the test of numbers, quantities, times, &c. I found that, with rare exceptions, they had but one foundation,—guess-work.

I recollect two of the schemes, each of which obtained very influential patronage from persons in high circles. On examination, it was found that one scheme would involve the constant employment of a fleet of at least 400 barges between London and Vauxhall bridges, each about 100 feet long; and that the other would require 2,000 carts, 2,000 horses, and 6,000 men, to be employed twelve hours a night throughout the year. In each case, a large reserve would also have been required to be used in emergencies. N. R.

SPACE IN THE BRITISH MUSEUM.

Of the thousands who daily crowd the sculpture galleries of the British Museum, but few are aware of the existence of the fine area afforded by the inner quadrangle of that building, now lost to the public. This area is nearly two acres in extent, and would afford a most desirable and agreeable means of communication and relief to the crowded galleries, where an impossibility is often found to contemplate in comfort the marvels they contain.

Why this available space should be barred and banned from the public, to answer no useful or necessary purpose, its grass plats being now only frequented by the cats of the neighbourhood, and the silence of its solitude only broken by their cries, is a question that the officials alone can answer. This space might be tastefully planted and decorated, as our French neighbours would have done long since, and afford room for the exhibition of any colossal and imperishable objects. There can be no good reason for this quadrangle sharing the fate of the Numismatic and Print departments of the Museum: it cannot, like these sacred chambers, be a show place for the friends of the resident officers, and consequently a *terra incognita* to the rest of the nation. Let us hope Mr. Sydney Smirke will remove the bolts and bars to the two doors in existence, and allow the public, for the first time since the erection of the building, an apportunity of judging of the proportions of their national museum. D.

UNIVERSAL ELECTRIC PRINTING TELEGRAPH.

A COMPANY to develop the system patented by Mr. J. W. Wilkins, is now in course of formation. There have been two or three attempts at a self-recording telegraph prior to this of Mr. Wilkins, but none which seems to have promised so well.

Every one knows that the means employed in the ordinary telegraph are the dial and index, by means of which the messages are reflected,—"coming like shadows, and so departing," and that for the effectual working it needs two clerks, one whose duty it is to read from the indicator the information which the other writes down. This staff is required where the message is direct and within the course of the electric current, but should the route be circuitous, or the town beyond the distance which it is known the current can travel (under the most favourable state of atmosphere and condition of the wires and insulators, 200 miles), then it must be multiplied twice or thrice, as the case may require; for instance, should communication be desired between Bristol and Edinburgh, Bristol must signal London—London, York—and York, Edinburgh,—the message being repeated no less than three times before reaching its destination,—a long, expensive, and, under the best management, but risky procedure. Under the new system, commencement is made by more perfectly insulating the wires, of which only one line is required for use; the dial and doubtful indices are done away with, and are replaced by an apparatus bringing into play the positive and negative currents of electricity with as much facility as the one current by existing methods: this is set into action by two small levers. One only would be needed, did not the English language contain more letters than can be conveyed by one; the one defining certain signs above a line, expressive of certain letters; the other below the line, expressive of the residue, the printing being effected by a moveable spring, having at the end a fine steel point, which presses endless paper against a small cylinder covered with black transposing material. This even would be of great service did it extend no further, inasmuch as the message sent from Bristol would be recorded in London by the machine itself, only needing an operator to send it forward to the next station; but to obviate this requirement, Mr. Wilkins has invented another instrument, nominated an "automaton repeater," doing away with any intermediate operator, and adding, as it were, fresh vigour to the electric current. Thus the sender at Bristol would call to London, "York:" the switch, as it is termed, would then be turned, bringing into use the "repeater," and the communication made perfect to York: the operator here seeing "Edinburgh" called, would turn the switch again, bringing into use the "repeater," and the communication would then be established *at once* between Bristol and Edinburgh: the message would then be passed and received in the latter city in a substantial form. By a practised operator the alphabet, it is stated, can be described in eleven seconds.

It is proposed to send messages of twenty words for 6d.

AN INVITATION TO THE HOME SECRETARY.

COME with us, *incog.* from the district of 5,000 fashionables to the districts of 250,000 of the pillars of this country—the working classes—and see if the *improvements* of the west are more important than the *necessities* of the east. Start, my Lord Palmerston, with us from any point east of Finsbury-square, but come *incog.*: you, as guardian of Justice, will hurry fast on to Shoreditch. Just stop to listen to the buffoonery of a County Court, the mock solemnities and contempt-breeding manners of a "dashing white serjeant;" hasten then to the Eastern Counties Railway; take your choice of either side of the arches, but trace your steps along the roads by their side; witness the accumulations of mud from unswept streets, roads without pavement, hollow ruts or wrong-sloped surfaces, retaining rain and other water and filth for weeks; do not hold your nose nor your breath, but breathe freely—it will be good for your family doctor; look into the houses, the water-butts, cesspools; the want of drainage in houses as well as streets; look under the arches, into the abominable street conveniences, built out on the pavement; glance at the dung-heaps, the low walls which surround the gas-works, instead of high walls to carry up high the effluvia; the houses built close in to nuisances. Look then at the inhabitants of this dense, dark, and murky district; the stunted size, the pale, sunken, ghastly eye; and ask the cause of it all, and why these people are not to be looked after, but are left to themselves.

After traversing for a mile east of these arches, turn to your left, and hurry through Bethnal-green up to the canal side, and go along the canal, aye, all the way to the City-road. In that irregular triangle, see how contrary to all science the roads are made or left; the nuisances accumulate, and the people are unnerved. How much longer are the people to be left to themselves, injuring not merely their own health and life, but those of all, as the pestilence steals in step by step? C. N.

WORK DONE IN THE INCUMBERED ESTATES COURT OF IRELAND.—An interesting summary of proceedings has been printed and issued, from which it appears that the produce of sales made down to 21st October last was 10,430,463*l.* odd, pretty equally distributed throughout the four great divisions of Leinster, Connaught, Munster, and Ulster; that the rentals of the estates sold amounted to 729,337*l.* odd, and their acreage to 1,691,702. The Court have had deposited in the Record Office 1,600 boxes of title-deeds, containing upwards of 100,000 documents and muniments of title. Thus is a new species of revolution quietly working its way over all Ireland. Some say there is no little need of the "Incumbered Estates Court" revolutionists nearer home. In Ireland, however, incumbered estates seem to have been the rule and any other the exception.

NOTES AND INQUIRIES.

The Abbey of Grace.—There is no "authority" that this monastic institution was situated "*in* the city of London," but *outside*, as is thus stated by Stowe in both the first and second editions of his "Survey," 1598 and 1603:—"On the east side, and by north of the Tower, lieth East Smithfield, Hog's-street, and Tower-hill; and east *from* them both was the new abbey, called *Grace*, founded by Edward III." The contrary supposition to this has, no doubt, been suggested to the inquirer, in the fact, that the present well-known Grace-church-street is within the City proper; but which is a corrupted appellation, as Stowe also certifies, where, in an earlier part of his work, is this passage:—"Then higher in *Grasse*-street is the parish church of St. Bennet, called *Grasse Church*, of the *herb market* there kept." J. D. D.

Green Stain on Free Stone.—Your friend, "Reader," need not give himself much uneasiness about the green on free stone newly put up, as it will disappear entirely *after a few days' frost*. It is quite common with most of the stone used in Scotland, but has been by no means so bad with us this year as last.

SUBSCRIBER.

EXPERIMENT ON VENTILATION.

A SHORT time ago, I had the pleasure of witnessing an instructive experiment illustrative of the *modus operandi* of a new system of ventilation coming into use, and known by the name of its introducer, Mr. Watson, of Halifax. The experiment not only demonstrated the importance of a right principle of ventilation, but of provision for a much larger supply of fresh air than is commonly thought necessary, and was conducted in the office of Mr. John Baird, architect.

The operator employed his usual apparatus,—a glass vessel resembling the ordinary receiver of an air-pump, about 7 inches in diameter, and 10 inches high, but differing from it in having a tubular prolongation 6 inches long or so, and 2 inches wide, issuing from its upper surface or domular top. Into this vessel, the lower edge of which rests in a small trough going round the periphery of a metallic plate or sole, and filled with water so as effectually to exclude all access of air from below, he introduced four short pieces of candle about an inch thick, yielding each a pretty large flame.

When the opening above was in a monotubular condition, the vital element of the air was rapidly consumed, and all the candles went out. But when they were relighted, and a thin division introduced into the vent, so as to convert it into two semi-cylindrical tubes, they continued to burn for a considerable time. It was very soon obvious, however, that the supply of pure air was not equal to the demand: the flames began to languish, and one of them expired; a little revival followed, but still the supply was inadequate; a second flame sunk under the mephitic gases that had been formed, and soon after a third all but succumbed. There was now an ample supply for the survivor, which blazed away most brilliantly, revelling in the redundance of oxygen. As the pure air began to predominate, the sickly companion became also sensible of its vivifying influence and reared its drooping crest; but there was not fuel enough for both, and now was exhibited a most interesting alternation of languor and revival, as the proportion of pure air increased or diminished under the varying circumstances.

During the experiment, the existence of the double (issuing and entering) currents was repeatedly tested with the most convincing results, by holding a smoking taper over the divided funnel.

By means of this aparatus, the operator was able also to make apparent the objections to which the common method of admitting the supply of fresh air from low levels is liable, and which is painfully palpable in the recent ventilation of our City Hall (Glasgow). By raising a portion of the under edge of the receiver out of the peripheral water-trough, and keeping it so by means of a small wedge, the air naturally rushed into the heated chamber, and the candle began to flare away famously; but instead of preserving its former steady perpendicular, the flame was deflected till its apex nearly touched the opposite side of the glass, conveying a very intelligible notion of the condition of those who are in the way of these aerial currents; and as in our City Hall,—thanks to the "ventilator,"—their name is legion, such is the unfortunate predicament of almost every individual present.

The system to which I have been alluding has been introduced in many instances and with success,—in the case-room of the *Herald* office, for example. The necessity varies from the requirements of five pairs of lungs to that, including the gas-lights, of more than 200 pairs, or from a supply of 50 cubic feet of air per *minute*, to that of 2,000 cubic feet in the same time. The ventilators completely provide for the whole range between these opposite extremes, maintaining throughout a pure and invigorating atmosphere. J. M.

ARCHITECTS AND COMMITTEES.

ELLIOTT *v.* THE MAYOR AND CORPORATION OF SOUTHAMPTON.

IN the County Court of Southampton, held on the 15th November, the plaintiff in this action sued the corporation to recover the sum of 40*l*. The plaintiff's attorney, Mr. Moody, stated that his client was an architect and land surveyor, and had been induced by invitation to engage in a competition for laying out the public lands. The decision of the corporation was not officially made known to his client until April last,—that decision being that the first premium of 40*l*. had been awarded to the corporation surveyor, and the second of 20*l*. to Mr. Elliott, who, on inspection of the first plan, finding it at direct variance with the written instructions furnished to the competitors, declined to receive the second prize, and claimed the first. The plaintiff failing to obtain any satisfactory explanation from the corporation, who refused all reference, then decided on resorting to legal proceedings. It so happened that since these proceedings had been commenced, Mr. Elliott had become a member of the council, and he might, perhaps, be now thought to occupy a somewhat anomalous position. He felt, indeed, that a point of great importance to the members of his profession had to be decided. It was matter of public notoriety that committees and public bodies entertained the notion that they were at liberty to give any instructions they pleased to competitors, without being themselves bound by such instructions. Architects and artists thus became exposed to the most flagrant injustice: they were called on to employ their talents in working out a given problem, and then often found that they had failed of success by their adherence to the conditions given. The instructions in the present case informed the architects that they were to have regard to the Marsh Improvement Act, and particularly to certain clauses referred to in that Act. Those clauses rendered it utterly impossible to carry out the selected plan without leaving out nearly all its distinctive features. It was not consistent with the commonest principles of justice that a design should be selected because it contained features which the other competitors, by adhering to the instructions given them, were prohibited from inserting, and that then the parties so acting should turn round and say, "Oh, but we do not mean to carry out these objectionable parts." The defence which was to be set up to this action was,—that at the meeting when the competitors assembled to meet the Marsh Committee, verbal instructions were given to the effect that the competitors were at liberty to frame their designs in anticipation of another contemplated Act to do away with the restrictions of the Marsh Improvement Act. There was sufficient evidence to disprove any such verbal instructions; but even suppose them to have been given in this desultory way, it was preposterous to suppose that they could be permitted to overrule the written instructions subsequently sent by the town clerk to each competitor.

At the conclusion of Mr. Moody's address, the judge (Gale) said that as he had formed an opinion on the law of the case adverse to Mr. Moody, who would doubtless appeal, it would be better for his client to submit to a nonsuit and refer at once to the Superior Courts. His Honour then stated that he doubted whether he ought not to have called on the corporation to reconsider the plans. He also doubted whether the class of buildings shown on the plan selected as first might be considered as exceptions from the restrictions of the Act; and his opinion as to the liability of committees was, that as the selection was a matter for their judgment, they were at liberty to please themselves; "*in other words, they themselves were at liberty to disregard the instructions given by them to competitors!*"

Notice of appeal was given.

Miscellanea.

THE SOUTHERN SEWERAGE OF THE METROPOLIS.—A commissioner of sewers for Surrey and Kent writes us on this subject at some length, pointing out what he conceives would be the proper way to rid the south side of its sewage. "Suppose it is emptied into the River Lea or the Ravensbourne," he remarks, "it still would come into the Thames, and with its waters be carried with the flood-tide westward of London-bridge; therefore it is only going a circuitous route, and at a heavy expense, still to make use of the Thames. The direct road into the Thames is the best and cheapest. Thus, let the outlets be carried down below low water, covered over either with brickwork or iron-pipes, so as to keep effluvia from the persons in the neighbourhood or travelling by steam-boats," &c. He hopes the "Government will not be goaded on to lend their aid to so expensive and useless a work as carrying the sewerage to Deptford and Blackwall, which will not drain the streets and courts in the metropolis, but only put off for another generation the effectual draining of these places, so much wanted." The first change of the Thames water in his time, he observes, took place when the bilge and stagnant water in the docks was flushed out: then the smelts left the river, or were killed. The worst enemy the fish ever had, however, he considers the gas liquor disembogued through the sewers. Fish of all sorts, he remarked, then left the river. "If you pollute this stream, you ought to provide means to get good water for the inhabitants." He complains that seamen are not provided with purer water sources.

MEDAL OF LORD GEORGE BENTINCK.—A medal has been struck for the subscribers to the Bentinck Memorial, the funds, we suppose, being more than sufficient to pay for the statue of the deceased statesman erected in Cavendish-square. It has been executed by Mr. Benjamin Wyon, and is 2 inches in diameter. On the obverse, around the head, is, "Lord George Bentinck; born, 1802; died, 1848." On the reverse, simply this sentence—"Brave—earnest—generous—unselfish—true; he won the confidence and riveted the attachment of a great party, which his patriotism had inspired with courage, and his self-devotion had animated with zeal." The head is a good likeness, and the execution altogether very creditable to Mr. Wyon.

PRESERVE THE PANORAMAS.—A beautiful panorama of Mexico is now exhibiting in Leicester-square, which, I see, is advertised to be closed very shortly. This, I fear, means painted over or destroyed. Now, would it be out of place in your valuable paper to suggest, that such exquisite works of art, so beneficial to the rising generation, should be saved by the appropriation of them to the walls of some public building or to private ones, erected on the extensive domains of such wealthy proprietors as the Marquis of Westminster, the Marquis of Stafford, &c.?—A. B. C.

VILLAGE LIBRARIES.—A scheme for the supply of villages and hamlets with books for perusal, on some such plan, we presume, as that for many years practised in Scotland, has been adopted by the Yorkshire Union of Mechanics' Institutes, at the suggestion of its honorary secretary, Mr. J. Hole, and is about to be put in practice. "Sections of fifty volumes will now be forwarded to any village where twenty-five subscribers at 1½d. a week, or 1s. 6d. a quarter, paid in advance, and a librarian, can be found." In Scotland, and also, we presume, in Yorkshire, the libraries are itinerant, so that, when the lot is done with, it is sent elsewhere and replaced by another.

GAS MANUFACTURE.—Mr. J. M. Souchon, of Paris, has taken out a patent for a mode of increasing the quantity of gas, and obtaining cyanides by passing the products of the distillation of coal, &c. through a heated retort containing alkali, or alkaline salts; for obtaining illuminative gas and cyanides, by injecting a mixture of tar and ammoniacal liquor into a heated retort, and passing the vapours through a second heated retort, containing alkali or alkaline salts; purifying gas by a series of revolving purifiers, containing liquids and pieces of wood, or other solid substances, continually wetted by the solutions, and exposed to the gas; and for a peculiar mode of constructing the doors of retorts and their hinges.

Competition at Pontypool.—Of thirty-nine designs submitted for the new town hall about to be erected at Pontypool by the Lord Lieutenant of the county of Monmouth, in commemoration of the birth of a son and heir, those by Messrs. Bidlake and Lovatt, of Wolverhampton, architects, have been selected. The premium for second was awarded to Mr. Trimen.

Testimonial to Teacher of Birmingham School of Art.—A silver cup, manufactured by Messrs. Elkington, Mason, and Co. from a model by Chevalier Schlick, has been presented to Mr. Wallis, the head master of the School of Practical Art at Birmingham, by the students of the school.

Bedfordshire Archæological Society.—The monthly meeting of this society was held on Tuesday in last week, at Bedford, when various donations were made, chiefly books, including a Dutch almanac for the use of those who cannot read,—a sort of hieroglyphical production, still, it is believed, regularly issued, and in which cold weather, for instance, is predicted under the shape of a glove; warm weather, a hat sideways; frost and snow, a snow shoe; time for turning up the soil, a three-pronged fork or spade, &c.

The Wellington Statue for Manchester.—Of the thirty-seven model statuettes sent in by twenty-nine sculptors, selected, with others who refused, to compete for this statue, the judges appointed, Lords Ellesmere and Wilton and the Bishop of Manchester, have chosen a pedestrian statue by Noble, and the subscribers' committee have confirmed the choice. Unfortunately a good deal of dissatisfaction, it appears, has been expressed that an equestrian statue was not selected. The judges were of opinion that it would have been difficult to manage such a statue in connection with the site and the associate pedestrian statue of the late Sir Robert Peel. The local papers speak of equestrian statuettes by Adams and Bell, amongst the number sent in, as being very fine ones.

The Iron and Copper Trades.—The iron trade is still improving; but from inability to obtain supplies of coal and iron stone, furnaces have been put out of blast. Fear of exciting new demands on the part of workmen, has a salutary influence in suppressing the continual efforts of speculators to raise prices. There is hope of an improvement in the export trade from the announced reductions of import duties in France, 10 per cent. on wrought iron, and 20 to 30 on cast. The metal trades have been checked in their manufacturing prosperity again by another unaccountable rise in the price of copper of 9*l.* 10s. a ton, and a still further advance is even feared.

Leicester-square.—The threatened blocking-up of this square with a "Cosmos Institute" constitutes the burden of many a complaint addressed to us in denunciation of the project. Some of our correspondents are mistaken, however, in imagining that we have never yet protested against the choking-up of this little bit of metropolitan lung with such tubercles as brick and mortar, in any shape, cannot but constitute, when deposited on a site which becomes more and more precious as an open space, the more the metropolis extends. We have again and again protested against anything being built on Leicester-square that would diminish its utility as an oasis and breathing-spot in the midst of the wilderness of brick and mortar. "Cosmos Institutes," therefore, so long as they are associated with Leicester-square at least, will meet with little favour or promotion from us. One correspondent, "Flaneur," proposes, on the contrary, that no time should be lost in sweeping away even the Cosmolitan germ already deposited, and which, he says, he always understood was but a temporary erection, as its seedy aspect still betokens. He would have the square converted into, what London does not yet possess, an open "Place," levelling its area by raising the lower end, which, faced with an elegantly-designed parapet, and flight of steps in the centre, he remarks, might be rendered exceedingly ornamental and attractive. "From the flight of steps," he continues, "a fine new street might be opened to Pall-mall East, having on one side the magnificent pile of buildings which, under whatever name, is destined, it is hoped, to adorn the finest site in Europe, at present usurped by a hideous agglomeration of workhouses, barracks, and what not; and then, who knows, a beginning once made, we might have the Mall and Carlton-terrace opened to Charing-cross: and I can just dream of the possibility of a noble avenue, worthy of a great nation, being carried (instead of the present "crooked way") thence to the New Houses of Parliament, Government offices, and other national and public buildings, with piles of first-class mansions for members of Parliament and others, artistically grouped on each side; new Westminster Bridge worthily designed and executed; the Thames embanked; and a connecting street (uniform with the opening to the Mall) thence to Charing-cross by Northumberland House."

Water.—A bill is to be laid before Parliament for the incorporation of a new Company to supply Portsmouth and Gosport with water from the Havant Springs. About 500,000 gallons a day are said to be requisite, while the springs yield five times that amount, or 2,500,000 gallons a day.——A like application to Parliament is announced for the incorporation of a Company to supply Stourbridge and adjoining townships with water, from reservoirs supplied by the Gig Mill Stream, at the Heath, in the township of Stourbridge.——The Cheltenham Water Company have given notice of their intention to apply to Parliament next session for increased powers, and for obtaining an increased supply of water from that which now supplies the Syreford mill, and some which flows into the river Colne. They also seek powers to contract with the Cheltenham Town Commissioners to supply water for public purposes, or for the use of certain classes of the inhabitants.——Lady Charlotte Guest has promised to supply the whole of Dowlais with water at her own expense, involving an outlay of 3,000*l.* This town is in an extremely wretched sanitary condition.

The Wages Question: Metropolitan Brass Founders.—We have received a letter signed "J. Bethray," stating that the report that the journeymen brass and iron founders have been organizing for an advance of ten per cent. is erroneous as regards the trade society, which, he says, numbers nine-tenths of the whole of the London journeymen founders. No such organization, according to our correspondent, has been contemplated, or in any way alluded to by the society; nor can he hear that any of the few non-society men have hinted at anything of the sort. The report he naturally thinks is one likely to do much mischief; in fact, he adds, "I have every reason to believe it has already done so, therefore it is hoped that in justice to us you will in your next correct the error, or take such steps as will set us right with our employers, and arrest the mischief and ill-feeling which this report has created." We very gladly do so.

Free Libraries and Museums.—A series of three reports on the Manchester Free Library, from its origin, by the chief librarian, Mr. E. Edwards, has been printed and issued, together with an introduction on the results and defects of the Public Libraries Act of 1850, by the same experienced librarian. The Liverpool Library and Museum committee have also, we observe, just issued a report, containing a retrospect of the proceedings of the past year. These reports will be read with interest by all desirous of promoting the establishment of free libraries and museums.

Holyrood Palace Gardens.—A correspondent, "Exoptans," complains that the classical precincts of the Royal Palace at Edinburgh are desecrated by conversion into market-gardens, and proposes that they should be restored to the public use.

The Birmingham and Midland Institute.—This new project was inaugurated by a meeting of five to six thousand persons of all classes in the town-hall, Birmingham, on Thursday evening in last week, Captain Tindal in the chair, when able addresses were delivered by Mr. Cole, Sir R. Peel, and various other gentlemen, in which the importance of art and industrial education for artizans was strongly inculcated, and the union of an elementary school of art with the proposed institute recommended as an essential to the success of the institute itself, which ought to be self-supporting, and to be fed, as it were, by the art-education acquired in the school.

The Liverpool Architectural Society.—On Wednesday in last week, at a meeting of this society, held at the Royal Institution, Mr. Verelst presided. The secretary (Mr. Boult) announced that the next subject for competition would be a design for a church to afford accommodation for 400 persons, in the style of Palladio, plans to be sent in by December 28th. Mr. Watson, of Halifax, manufacturer of the self-acting double-current ventilator, read a paper on "Ventilation." He stated that his invention was framed upon the principle of allowing vitiated air to escape and fresh supplies to enter spontaneously, by their own elastic force, without causing draught. His plan consists of a tube, fixed in the ceiling or other portion of the building which may be found most convenient, and constructed with two funnels or divisions, up one of which the vitiated atmosphere escapes, while fresh and equal supplies of pure air are admitted into the room.

Road-makers' Tenders.—The following tenders were sent in for roads, drains, &c. on the Sutton estate, purchased for the members of the City of London and Counties Freehold Land Society:—

S. Wright	£960	0	0
J. B. Oldham	773	0	0
E. Murray	768	0	0
B. Green	703	11	0
G. H. Lovegrove	683	0	0
R. T. Carlisle	568	0	0
W. B. Smith	498	6	0

Parrat's Tubular Life-rafts, &c.—Some successful experiments have just been made with various modifications of a valuable invention by Mr. Parrat, of the Treasury, which we first brought under the notice of the public on the 23rd April last. As then intimated, the main principle of the invention consists in the use of India-rubber tubes, inflated with air, and made to float with nettings and cross spars, and either attached to a boat or without one, so as to constitute either a life-boat, incapable of being upset, or a life-raft of same description. Another modification consists of a moveable bridge, floated on inflated tubes, and made with spars, lazy tongs, and thin boards, the whole of the apparatus for a bridge, capable of being thrown across a small river, being made so as to be packed on the back of a single mule, and easily put together.

Rolling Iron.—Mr. Newton, C.E. of Chancery-lane (by direction of the inventor), has patented—1. The employment of rolls for large bars, mounted in a vertical position, when three rolls are combined, equivalent to two pairs of rolls, each pair rolling in opposite directions. 2. The employment of end rolls in combination with the main rolls, and having axes at right angles to the axes of the main rolls, and acting in whole, or in part, against the ends and collars of the main drawing rolls.

Hollin's Statue of Sir R. Peel.—Messrs. Elkington, Mason, and Co. of Birmingham, have undertaken to cast in one piece Mr. Hollin's model of the late Sir Robert Peel, so that, as a local contemporary remarks, "Birmingham may boast not only of having within itself an artist capable of modelling a statue of the late statesman, but also of having the means of producing the work in bronze."

Gas Regulators in Private Dwellings.—A correspondent, Mr. George Aickin, favours us with some account of his personal experience in gas regulators, and suggests an improvement. He had a regulator applied to his gas fittings, which acted very well for a time, but at length failed to act properly, the consequence of which was, not simply a failure to regulate the pressure, but an escape of gas from the regulating apparatus, which led to an explosion, in which he had a narrow escape from serious, if not fatal injury. The regulator consisted principally of an outer cylindrical casing, partially filled with water, and a smaller inverted one, dipping into the water, like the ordinary gasometer, and provided with an air-chamber, to make it more buoyant. When the gas was admitted, it closed a valve, by raising the inner vessel, in proportion as the pressure in the mains exceeded that required. If only one light was required, the opening was nearly closed; if more, it instantly increased in area. The cause of the accident was a leakage of the water from bad construction. Our correspondent suggests, as a more efficient and safe regulator, one consisting of a similar outer and inner vessel, the latter attached to the former by means of a band of leather, oiled silk, or other pliable material, as in a dry meter, and balanced by means of a lever and weight, or other contrivance, a conical valve to the inlet-pipe, but entirely closing the opening, a weight or weights corresponding to the pressure required fixed to the roof of the inner vessel, and enclosed in a domed glass tube fixed to a lid, which would be screwed down to the outer casings, and made gas-tight." If anything went wrong, he remarks, it would only fail by not indicating.

The Trade in Furniture Woods.—Time was when a portion of the capital of this country employed its population in the manufacture, and its merchants in the exportation, of furniture. The foundations of the fortunes of the more prosperous cabinet-makers and ship-owners were so laid. Circumstances, however, interrupted this state of things, through the imposition of war-duties (which existed when we entered the trade), say 12*l.* 10s. per ton on Spanish mahogany, and 45*l.* per ton on rosewood; and Lancaster ceased to employ its people in the manufacture beyond the home-trade, and the merchants ceased to load the 'tween decks of their ships with furniture to the colonies. From the best information we have obtained there is not, just now, a wiser policy than transporting furniture to San Francisco and Australia, as a foreign trade; nor a more prudent policy than that of laying in a stock of furniture wood for seasoning, because, there being no duties, the unexampled prosperity of nearly every colony insures, for a long series of years, a market for the furniture of Europe; its fashions being preferred. —*Messrs. Chaloner and Fleming's Circular.*

TENDERS

Received at Hunter's Hall, Epping, Essex, for farm buildings, for the Hon. John A. Ashley (Messrs. Hannell and Robb, St. Ives, architects), were as follow:—

Finding	£1,560
Stredder	1,200
Field and Sons (Enfield)	1,200
Savile (Chigwell)	1,150
Harrison	970